

Track: SOPS in Medical Offices, Nursing  
Homes & Other Settings

Session: Linking SOPS Results to Outcomes &  
Setting Characteristics

Date & Time: April 21, 2010, 8:00 am

Track Number: SOPS T3 – S4

# Linking Medical Office SOPS Scores & Medical Office Characteristics

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# Objectives

- Examine the relationship between
  - Staff and medical office characteristics, and
  - Patient safety culture as measured by the AHRQ Medical Office SOPS

# Background on the Medical Office SOPS

- Developed in response to need for a patient safety culture survey in the outpatient medical office setting
- Released by AHRQ March 2009

[www.ahrq.gov/qual/patientsafetyculture/](http://www.ahrq.gov/qual/patientsafetyculture/)

# Medical Office SOPS Dimensions

- Different from the hospital survey— dimensions specific to medical offices
  1. Patient safety and quality issues
    - Access to care
    - Charts/medical records
    - Medical equipment
    - Medication
    - Diagnostics & Tests
  2. Information exchange with other settings
  3. Office processes and standardization
  4. Work pressure and pace
  5. Patient care tracking/follow-up
  6. Staff training

# Medical Office SOPS Dimensions

- Dimensions similar to the hospital survey—
  7. Teamwork
  8. Organizational learning
  9. Overall perceptions of patient safety & quality
  10. Owner/managing partner/leadership support for patient safety
  11. Communication about error
  12. Communication openness
- Pilot data factor structure and reliabilities were examined (Cronbach's alpha reliabilities: .75 to .86)

# Medical Office Pilot Test

- Pilot tested in 182 medical offices with 4,174 provider & staff respondents
- Worked with partners:
  - AAFP National Research Network
  - AAP Pediatric Research in Office Settings
  - Allina Hospitals and Clinics
  - Baylor Health Care System—HealthTexas Provider Network
  - Cleveland Clinic
  - Michigan State University Health Team
  - MGMA

# Medical Office Characteristics

- 63% single specialty / 37% multispecialty
- 37% family practice/family medicine  
27% pediatrics  
23% internal medicine  
10% OB/GYN or GYN
- Office sizes (# of providers & staff)
  - 3 to 10 15%
  - 11 to 20 30%
  - 21 to 30 20%
  - 31 or more 35%

# Pilot Test Medical Office Characteristics

- Ownership

  - 59% – a hospital or health care system

  - 25% – physicians or providers, or both

  - 14% – a university, or academic medical institute

- Use of electronic tools

  - 21% fully implemented electronic ordering of medications

    - 45% in the process of implementing

  - 32% fully implemented electronic medical records

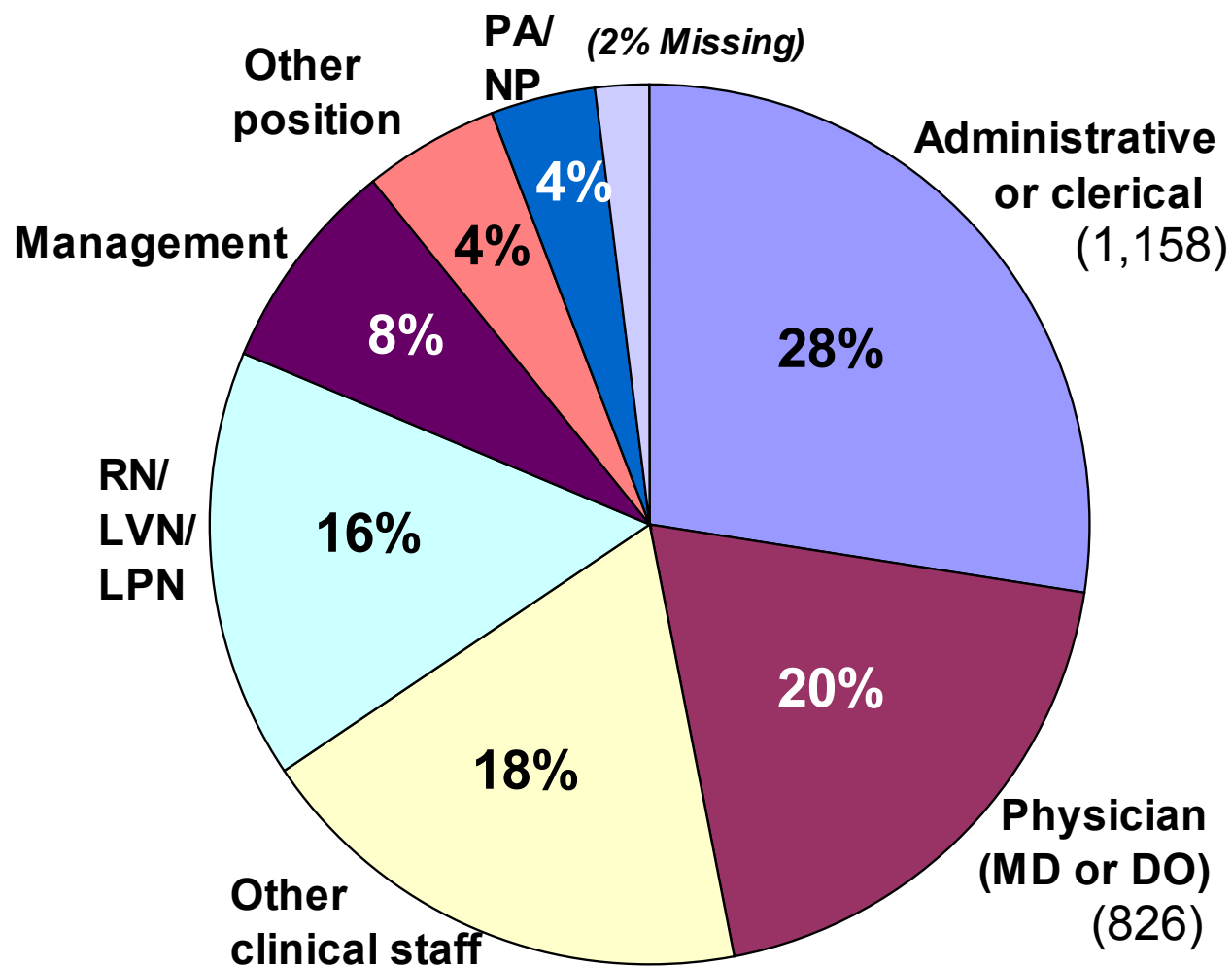
    - 37% in the process of implementing



# Response Rates & Respondents

- Paper & web surveys administered to all providers and staff
- Overall response rate = 70% (4,174 / 5,931)
- Paper response rate = 78% vs. Web = 65%
- Average no. of respondents per office = 23 (5 to 92)
- Average office response rate = 74% (33% to 100%)

# Staff Positions



# Analyses Linking Staff and Medical Office Characteristics & Patient Safety Culture Scores

# Medical Office Survey on Patient Safety Culture

- 15 patient safety culture measures
  - 12 patient safety culture composites
  - Average composite score (across the 12 composites)
  - Average rating on quality (patient-centered, effective, timely, efficient, equitable)
  - Overall rating on patient safety
- Measures calculated at medical office level
  - % positive response within each office

# Analysis Questions

*Are there differences in patient safety culture scores by:*

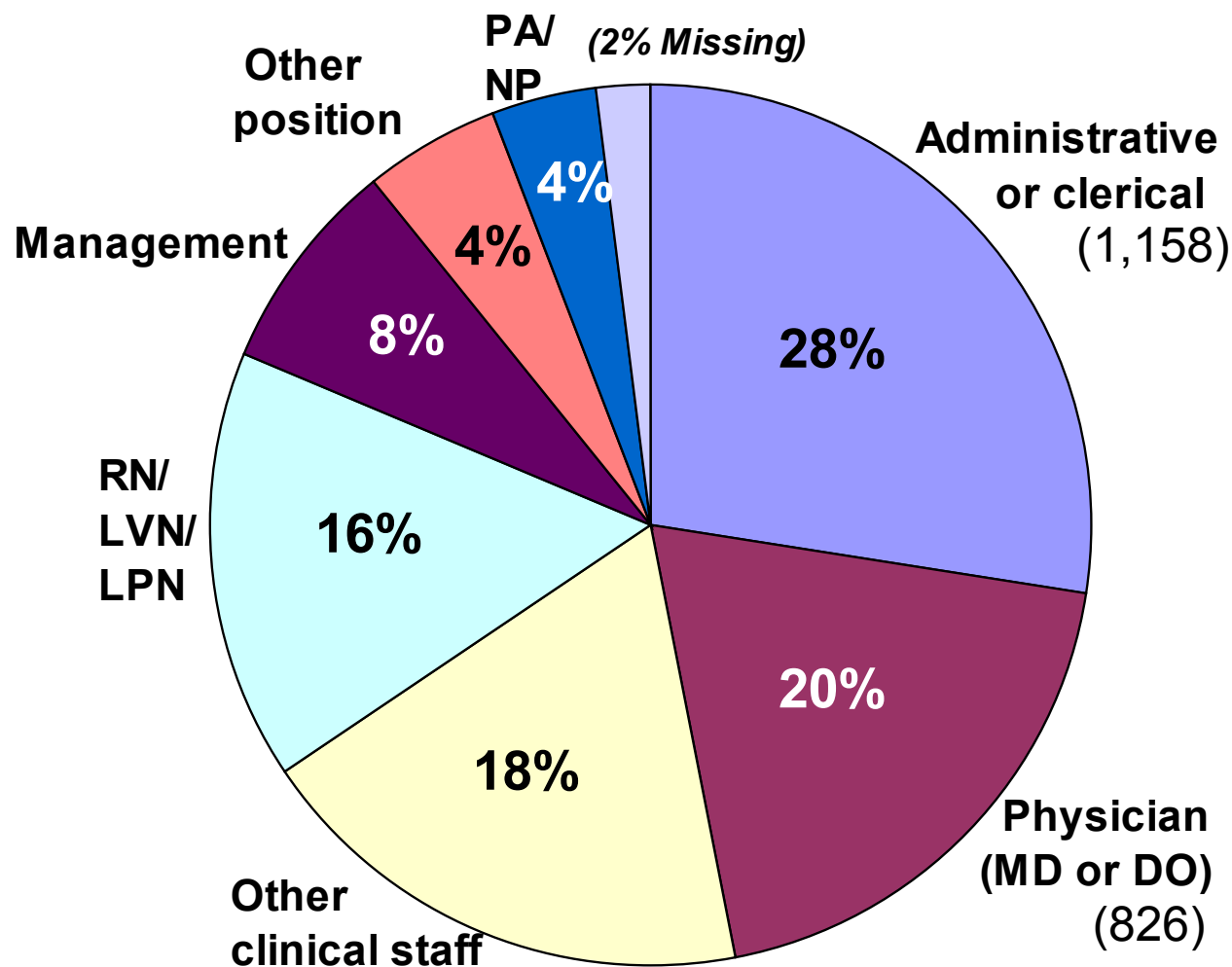
- 1) Staff position?
- 2) Medical office characteristics?
  - a) Office size
  - b) Ownership
  - c) Specialty of office
  - d) Health information technology (HIT) implementation

# Analysis 1: Staff Position

Question: Are there differences in patient safety culture scores by staff position?

Prediction: Physicians will have more positive opinions about patient safety culture in their medical offices than all other staff.

# Analysis 1: Staff Position



# Analysis 1: Staff Position—Method

- Calculated average % positive scores by staff position at the medical office level (N=182)
- Conducted one-way analysis of variance (ANOVA) to examine differences in MO SOPS measures across several staff positions
  - Followed-up with t-tests to examine differences between specific staff positions



# Analysis 1: Staff Position—Results



Management & physicians had the same patient safety culture scores on all measures except:

- Patient Care Tracking/ Follow-up  
(Management = 78% vs. Physicians = 67%)

# Analysis 1: Staff Position—Results

 Management & physicians had MORE POSITIVE scores than other staff on 10 of 15 measures

- Communication Openness (+20%)
- Staff Training (+15%)
- Communication About Error (+13%)
- Average Rating on Quality (+12%)
- Overall Rating on Patient Safety (+10%)
- Organizational Learning (+10%)
- Teamwork (+9%)
- Owner/Managing Partner/Leadership Support (+6%)
- Overall Perceptions of Patient Safety and Quality (+5%)
- Average Composite Score (+3%)

# Analysis 1: Staff Position—Results

 Management & physicians had LESS POSITIVE scores than all other staff on 3 measures

- Information Exchange With Other Settings (-15%)
- Patient Care Tracking/Follow-up (-10%)
- Patient Safety and Quality Issues (-6%)

# Analysis 2: Office Size

Question: Are there differences in patient safety culture scores by medical office size?

Hypothesis: Smaller medical offices will have more positive patient safety culture scores than larger medical offices.

# Analysis 2: Office Size—Method

- # of physicians as proxy for size  
Mean # of physicians = 8.1 (range = 0 to 54 )
- Correlations between # of physicians and patient safety culture scores


# Analysis 2: Office Size—Results

- # of physicians negatively correlated with 10 of 15 measures

(average  $r = -.23$ ; range:  $-.16$  to  $-.35$ )

	Correlation with # of MDs or DOs
Average MO SOPS Composite Score	$-.24^*$
Average Rating on Quality	$-.21^*$
Overall Rating on Patient Safety	$-.23^*$

$*p < .01$

 Smaller medical offices had slightly more positive patient safety culture scores than larger medical offices.

# Analysis 3: Ownership

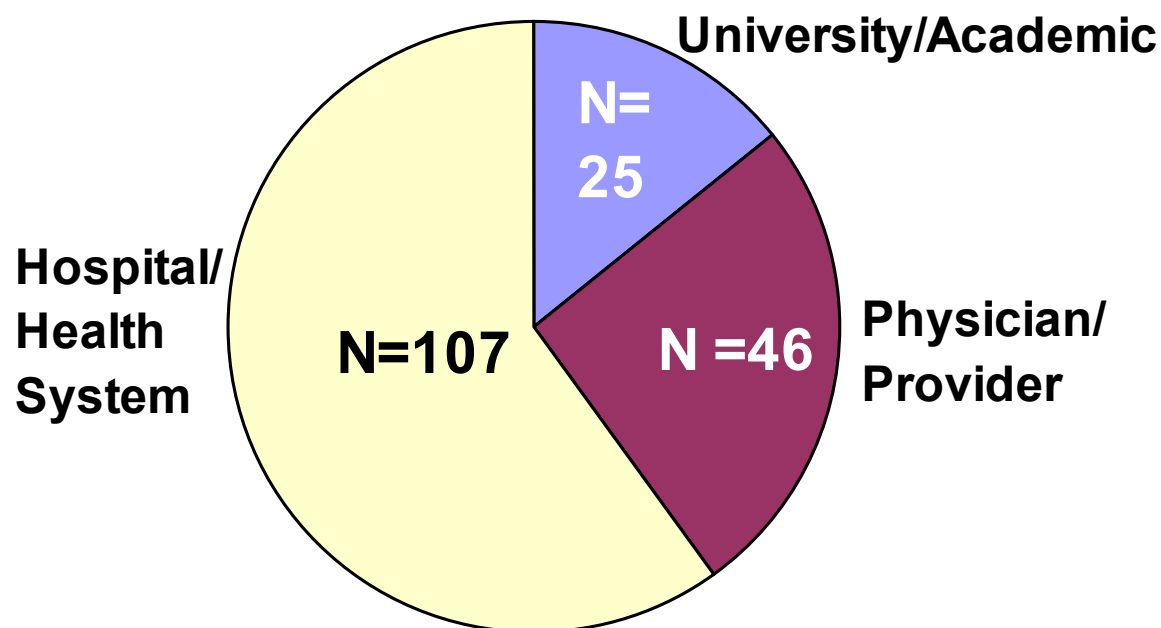
Question: Are there differences in patient safety culture scores by medical office ownership?

- Physician/provider
- Hospital/health system
- University/academic

Hypothesis: Physician/provider-owned offices will have more positive patient safety culture scores than other ownership types.

# Analysis 3: Ownership—Method

- One-way ANOVA to examine differences in MO SOPS measures by ownership






# Analysis 3: Ownership—Results



Physician/provider-owned offices had MORE POSITIVE scores than hospital/health system-owned offices (on 8 of 15 measures)

- Average Rating on Quality (+13%)
- Work Pressure and Pace (+12%)
- Rating on Patient Safety (+11)
- Staff Training (+10%)
- Office Processes and Standardization (+8%)
- Owner/Managing Partner/Leadership Support for Patient Safety (+7%)
- Overall Perceptions of Patient Safety and Quality (+7)
- Average Composite Score (+5%)

# Analysis 3: Ownership—Results

 Physician/provider-owned & university/academic had the same patient safety culture scores on all measures except:

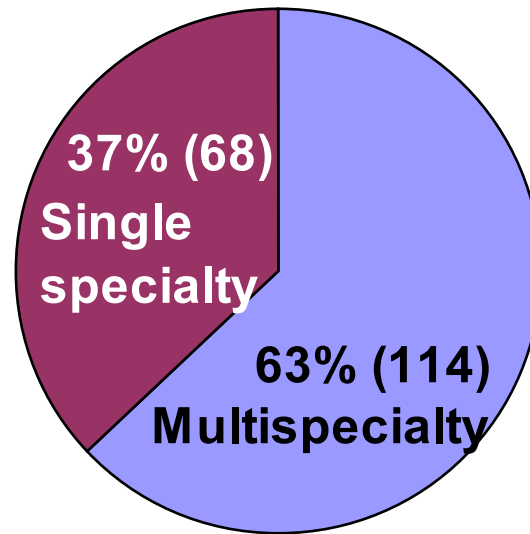
- Owner/Managing Partner/Leadership Support for Patient Safety  
(76% physician-owned vs. 65% university-owned)

# Analysis 4: Specialty

Question: Are there differences in patient safety culture scores between single specialty & multispecialty offices?

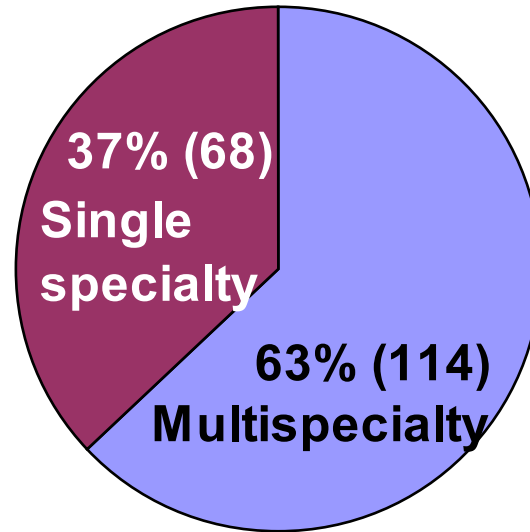
Hypothesis: Single specialty offices will have more positive patient safety culture scores than multispecialty offices.

# Analysis 4: Specialty—Method



- Partial correlations (controlling for office size) between specialty and patient safety culture scores

# Analysis 4: Specialty—Results



No significant relationship between single and multispecialty offices and patient safety culture scores.

# Analysis 5: HIT Implementation

Question: Is HIT implementation related to patient safety culture scores?

Hypothesis: Offices with greater HIT implementation will have more positive patient safety culture scores than those with lesser HIT implementation.

# Analysis 5: HIT Implementation—Method

- Partial correlations (controlling for office size) between HIT implementation and MO SOPS scores
- Degree of HIT implementation
  1. Not Implemented (& no plans in the next 12m)
  2. Not Implemented (but plan to in the next 12m)
  3. Implementation in Process
  4. Fully Implemented

# Analysis 5: HIT Implementation

HIT Tools	% In process	% Fully implemented	% Combined
Appointment scheduling	32%	59%	(91%)
Medication Ordering	45%	21%	(66%)
Ordering of tests, imaging, or procedures	40%	23%	(63%)
Access to patients' test or imaging results	40%	42%	(82%)
EMR	37%	32%	(69%)



# Analysis 5: HIT Implementation

HIT Tools	% In process	% Fully implemented	% Combined
Appointment scheduling	32%	59%	(91%)
Medication Ordering	45%	21%	(66%)
Ordering of tests, imaging, or procedures	40%	23%	(63%)
Access to patients' test or imaging results	40%	42%	(82%)
EMR	37%	32%	(69%)

## Results



Overall, HIT implementation was not significantly related to patient safety culture scores.

# Conclusions



## Staff Position

Overall, management & physicians had more positive patient safety culture scores than other staff, except on:

- Information exchange with other settings
- Patient care tracking/follow-up, and
- Patient safety and quality issues



## Office Size

Smaller medical offices had slightly more positive patient safety culture scores than larger medical offices.



## Ownership

Physician/provider-owned offices--

- Had more positive patient safety culture scores than hospital/health-system owned offices
- Were similar to university/academic offices

# Conclusions



## **Specialty**

No significant relationship between single and multispecialty offices and patient safety culture scores.



## **HIT Implementation**

Overall HIT implementation not significantly related to patient safety culture scores.

# Next Steps

- Examine larger dataset of 470 medical offices combining pilot test with data from PBRN data collection
- Questions?
  - [DatabasesOnSafetyCulture@ahrq.hhs.gov](mailto:DatabasesOnSafetyCulture@ahrq.hhs.gov)
  - [SafetyCultureSurveys@ahrq.hhs.gov](mailto:SafetyCultureSurveys@ahrq.hhs.gov)